FEDERAL AVIATION REGULATIONS

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION—WASHINGTON, DC

CHANGE 8 EFFECTIVE: SEPTEMBER 3, 1996

Part 125—Certification and Operations: Airplanes Having a Seating Capacity of 20 or More Passengers or a Maximum Payload Capacity of 6,000 Pounds or Greater

This change incorporates Amendment 125–26, Child Restraint Systems, adopted May 24 and effective September 3, 1996. Section 125.211 is the only section revised.

Bold brackets enclose the most recently added or changed material.

Page Control Chart

Remove Pages	Dated	Insert Pages	Dated
P–323	Ch. 7	P–323 through P–331	Ch. 8
Subpart F	Ch. 7	Subpart F	Ch. 8

Suggest filing this transmittal at the beginning of the FAR. It will provide a method for determining that all changes have been received as listed in the current edition of AC 00–44, Status of Federal Aviation Regulations, and a check for determining if the FAR contains the proper pages.

Amendment 125–26

Child Restraint Systems

Adopted: May 24, 1996 **Effective: September 3, 1996**

(Published in 61 FR 28416, June 4, 1996)

SUMMARY: This action withdraws FAA approval for the use of booster seats and vest- and harness-type child restraint systems in aircraft during takeoff, landing, and movement on the surface. In addition, this action emphasizes the existing prohibition in all aircraft against the use of lap held child restraint systems (including belly belts). This action is needed because the FAA has determined that, during an aircraft crash, the banned devices may put children in a potentially worse situation than the allowable alternatives.

FOR FURTHER INFORMATION CONTACT: Donell Pollard, Air Transportation Division (AFS–203), Flight Standards Service, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591; telephone (202) 267–3735.

SUPPLEMENTARY INFORMATION:

Background

The FAA is concerned about the safety of children who use certain forms of child restraint systems aboard aircraft. In 1992, the FAA set forth in §§ 91.107(a), 121.311(b), 125.211(b), and 135.128(a) the child restraint systems acceptable for use in aircraft by imposing labeling requirements and certain use requirements. Since that time the FAA has supplemented these rules with advisory material and with a public information leaflet entitled, ''Child/Infant Safety Seats Recommended for Use in Aircraft.''

In September 1994, the FAA issued a report entitled, ''The Performance of Child Restraint Devices in Transport Airplane Passenger Seats'' (the ''CAMI'' study). The study found that, as a class of child restraint devices, shield-type booster seats, in combination with other factors, contributed to an abdominal pressure measurement higher than in other means of protection while not preventing a head impact. The study found that fundamental design characteristics of shield-type booster seats made their belt paths incompatible with aircraft seat belts. In addition, the study found that vest- and harness-type devices allowed excessive forward body excursion, resulting in the test dummy sliding off the front of the seat with a high likelihood of the child's entire body impacting the seat back of the seat directly in front of it. Rebound acceleration presented further risk of injury. Also, the study found that belly belts allowed the test dummy to make severe contact with the back of the seat in the row in front of the test dummy and that a child may be crushed by the forward bending motion of the adult to whom the child is attached. The research involved dynamic impact tests with a variety of certified child restraints installed in transport airplane passenger seats at the 16g peak loads required in 14 CFR § 25.562(b)(2). Some of the tests of child restraint systems were configured to represent a typical multi-row seat installation and included testing the effects of the occupant impact against the backs of seats. The tests investigated transport airplane passenger seat compatibility with child restraints. A copy of the study is included in the rulemaking docket established for this rulemaking.

On May 19, 1995, the FAA issued Notice of Proposed Rulemaking (NPRM) No. 95–7 (60 FR 30690, June 9, 1995). The NPRM proposed to withdraw FAA approval for the use of booster seats and vest- and harness-type child restraint systems in aircraft during takeoff, landing, and movement on the surface. In addition, the NPRM emphasized the existing prohibition against the use in all aircraft

passenger seat is required if a child restraint is to be used (14 CFR §§ 121.311(c), 125.211(c), and 135.128(b)).

The provisions of §§ 91.107, 121.311, 125.211, and 135.128 identify those child restraints that are approved for use aboard aircraft. These child restraint provisions also apply whenever a child restraint is used for a child 2 years old or older who is required to have a separate seat on the aircraft. A child 2 years old or older must either be properly secured in an approved child restraint or properly secured with a safety belt in a passenger seat.

The FAA's 1992 determination as to which child restraint systems would be approved for use aboard aircraft was based on many years of work by both the FAA and the National Highway Traffic Safety Administration (NHTSA). In the 1970's, NHTSA adopted dynamic testing requirements for child restraint systems for use in automobiles. In the mid 1980's, the FAA and NHTSA undertook an effort to develop a common approach to the approval of child restraints for aircraft use. Federal Motor Vehicle Safety Standard (FMVSS) No. 213 (49 CFR § 571.213) was amended to provide criteria for manufacturers' self-certification of child restraints that were appropriate for both aircraft and automobiles.

FMVSS No. 213, as revised, is the current U.S. standard, and has allowed hundreds of models of seats to be approved, including booster-type child restraint systems (''booster seats'') and vest- and harness-type devices. The current FAA child restraint rules do not specifically refer to FMVSS No. 213. However, FMVSS No. 213 is the basis for the labels required under the FAA rules.

The current FAA rules on child restraint systems permit the use of child restraint systems only if they bear a proper label(s), meet certain use requirements, and meet adult accompaniment requirements.

Approved labels fall into three categories as follows:

1. Seats manufactured to U.S. standards between January 1, 1981, and February 25, 1985, must bear a label that states ''This child restraint system conforms to all applicable Federal motor vehicles safety standards.'' However, vest- and harness-type child restraint systems manufactured before February 26, 1985, are not approved for use on aircraft even if they bear this label.

2. Seats manufactured to U.S. standards on or after February 26, 1985, must bear the following two labels:

(i) ''This child restraint system conforms to all applicable Federal motor vehicle safety standards''; and

(ii) ''THIS RESTRAINT IS CERTIFIED FOR USE IN MOTOR VEHICLES AND AIRCRAFT'', in red lettering.

3. Seats that are not manufactured to approved U.S. standards must bear either a label showing approval of a foreign government or a label showing that the seats were manufactured under the standards of the United Nations. While the current rule language disallows vest- and harness-type child restraint systems manufactured before February 26, 1985, some of these systems manufactured after that date meet U.S., foreign government, or United Nations requirements.

The use requirements for child restraint systems are as follows:

1. The restraint system must be properly secured to an approved forward-facing seat or berth;

2. The child must be properly secured in the restraint system and must not exceed the specified weight limit for the restraint system; and

3. The restraint system must bear the appropriate label(s).

Because lap held child restraint systems (belly belts) are not secured to a forward-facing seat or berth, but instead are secured to the adult, they cannot be used under existing rules. Nonetheless, the

Pacific Cabin Safety Working Group (APCS Working Group); Cosco, Inc., a child restraint manufacturer; the United Kingdom's Civil Aviation Authority (CAA); the Joint Aviation Authorities (JAA); and an individual parent.

UAL supported the proposal, but stated that the effective date of any new regulations should be consistent with reasonable recurrent training schedules. In addition, UAL stated that changes in staff training would result in added costs to air carriers, but they did not quantify these costs.

FAA Response: The FAA has determined that the regulations should be effective in 90 days. UAL did not suggest a specific time frame in its comment, but the FAA has determined that a 90-day effective date should afford air carriers sufficient time to get the necessary information to all affected flight crewmembers and that it is unnecessary to synchronize the dissemination of this information with recurrent training. No data were presented by UAL or other commenters on any cost issues. Compliance costs, however, are discussed in the economic analysis set out in this preamble.

AFA, while supporting the proposal, stated that it continues to actively pursue the mandatory use of child restraint devices. In addition, AFA disagreed with the FAA assertion that if parents must purchase a separate seat to use an approved child restraint device, they would drive rather than fly. They stated that the FAA assumptions on this issue are unrealistic and flawed and do not take into account the impact of low-cost airlines and their enormous appeal to the family/tourist end of the travel market. The AFA stated that a family who is predisposed to buy a ticket would go ahead and purchase a separate ticket to use with an approved and recommended child restraint device.

FAA Response: The FAA has evaluated the costs and benefits associated with child restraint devices three times since 1990. The first report was prepared in 1990, the second report in 1993, and the third report in June 1995. AFA's comment was based on information contained in the second report. The third report, submitted to Congress on June 7, 1995, analyzed alternative scenarios. The scenario analyses concluded that if any significant charge is made for infant occupancy of a seat, the expected result is diversion to automobiles and a net increase in infant and adult fatalities and injuries. The study referenced by AFA was based on information from the second report. The AFA study simply documented observed market behavior associated with the entry of low cost carriers into a market and found that average fares fall and passenger volume increases. These findings are consistent with the FAA's findings and conclusions in all three studies on this issue. In addition, the FAA agrees with the AFA that a family who is predisposed to buy a ticket would purchase a separate ticket to use with an approved and recommended child restraint device. The above studies, however, indicate that very few families seem predisposed to purchasing tickets for their infants.

ATA commented that it was concerned about enforcement issues caused by labels in a foreign language and the problem of determining whether a child is within the weight restrictions for a restraint system. The ATA is also concerned about the overall effectiveness of child restraint systems. In addition, ATA stated that steps must be taken to address the problem of inconsistent FAA guidance and recommended that industry bodies assist the FAA in identifying possible problem areas before they arise.

FAA Response: This rulemaking prohibits the use of booster seats and vest- and harness-type devices by children, even if they bear an approved label. Therefore, enforcement issues concerning labels in foreign languages are not relevant to this final rule. Nor is the question of whether the child is within the weight limits specified on the label.

The FAA acknowledges ATA's concern that there could be compliance problems concerning child restraint devices that bear labels indicating that they are certified for use aboard aircraft when in fact they are not approved for use aboard aircraft. A companion rule issued by NHTSA, published in today's *Federal Register*, amends a provision in FMVSS No. 213 that permits booster seats and vest- and harness-type devices to be certified for use in aircraft. In view of the FAA's decision to withdraw approval of booster seats and vest- and harness-type devices for use on aircraft, NHTSA believes continuing to permit the certification of those restraints for aircraft use will likely be confusing to the public.

problem areas before they arise, the FAA always welcomes input from industry and will continue to seek such input on this issue. In response to ATA's concern about inconsistent internal FAA guidance, the FAA notes that information contained in Flight Standards Information Bulletins, Advisory Circulars, etc., will be reviewed to ensure that they correctly reflect the new requirements in this rulemaking, so there should not be any conflicts.

Little Cargo stated that vest- and harness-type devices should not be prohibited until the FAA gathers additional information and performance data on them. It is concerned that the FAA's decision to ban vest- and harness-type devices was based on inadequate testing and that such restraints could be modified to perform satisfactorily. Little Cargo stated that the prohibition of vest- and harness-type devices was based primarily on one uninstrumented test in contrast to the breadth of tests conducted on the other types of child restraint devices.

FAA Response: In response to Little Cargo's concern that only one type of test was performed on the vest- and harness-type device, the FAA notes that during dynamic testing, unacceptable head and body excursions and vertical displacement of the anthropomorphic test dummy was observed to the extent that the type of instrumented tests that other child restraint devices underwent was deemed not necessary for the harness. If the unsafe characteristics that all these devices share change in the future, the prohibition can be re-examined.

Little Cargo also stated that the FAA has significant performance concerns with all available forward facing child restraints, but is only prohibiting certain categories of these devices, including vest- and harness-type devices.

FAA Response: When considering which, if any, child restraint devices should be prohibited, the FAA looked at the alternatives available for children within the weight limits specified by child restraint manufacturers. The FAA has determined that most children who are within the weight specifications of booster seats (30 to 60 pounds) would be better protected in a passenger seat lap belt than in a booster seat because there would be less abdominal loading in a lap belt. For a child in the 30 to 60 pound range, a lap belt should remain across the pelvis and not directly load the abdomen. Because forward facing devices have rigid backs, unlike booster seats, the FAA has determined that children in the 30 to 40 pound range would be better protected in a forward facing device than in a booster seat because there is a decreased risk of abdominal loading in a forward facing device than in a booster seat. In addition, the FAA determined that children who are within the manufacturer's weight specifications of vest- and harness-type devices (25 to 50 pounds) would be better protected in a passenger seat lap belt or a forward facing child restraint device than in a vest- and harness-type device. Forward facing child restraint devices are designed for children from 20 to 40 pounds. While some forward facing child restraint devices do not provide a desired level of protection in a worst case survivable aircraft crash, there are no better alternatives available at this time. Also, because forward facing devices and passenger seat lap belts prevent the extreme body excursions observed in the harness test, most children within this weight specification for vest- and harness-type devices (25 to 50 pounds) would be better protected in either forward facing devices or lap belts.

In addition, Little Cargo stated that, in Notice No. 95–7, the FAA concluded that children weighing between 25 and 50 pounds, and even children under 2 years old, would be safer in a passenger seat lap belt than in a vest restraint. Little Cargo is concerned that using lap belts as the sole restraining device places enhanced stress on a child's abdomen that could lead to injury.

FAA Response: While the FAA stated that, if a child under 2 falls in the weight use limits recommended by vest and harness manufacturers, the child would be safer in a passenger seat restrained by a lap belt than in a vest- or harness-type device if no other approved device were available, the FAA went on to state that a child falling within the weight limits of a vest- or harness-type device (25 to 40 pounds), would be better protected in a forward facing child restraint device than in a lap belt. In addition, the study noted that the lap belt remained across the pelvis of the 24-month old dummy throughout

threat seen with forward facing devices, it is important to note that neither the booster seats nor the vest- or harness-type device tested by CAMI performed in a manner that would prevent head impact. It is not correct to say there would be little or no risk of a head injury with booster seats or vest- or harness-type devices. CAMI testing clearly shows that booster seats do not protect the head because of an unacceptable degree of head excursion in an aircraft environment. Forward facing devices, with rigid backs, reduce the risk of exposure to abdominal injury when compared to booster seats. Forward facing devices offer protection from the risk of abdominal injury and, unlike vest- and harness-type devices, prevent excessive body excursion.

Cosco questioned the proposed ban since it was based on a small sampling of booster seats and vest- and harness-type devices. Cosco believes that the problems encountered with the vest- and harness-type device tested are solvable and that all such restraints should not be banned based on the experience of just one.

FAA Response: The FAA has determined that at this time all vest- and harness-type devices have certain inherent critical design factors that preclude them from performing adequately in an aircraft seat. The testing, while only performed on a small sample of such devices, confirmed the basic problems with the design of the devices.

In regard to the FAA's request for comments on whether abdominal loading by itself is a predictor of injury, Cosco stated that rulemaking cannot be predicated on abstract numbers when the baseline for serious injury is undetermined. Cosco also stated that shield-type booster seats keep lap belts off a child's stomach whereas lap belts might become repositioned over the stomach because children often move around so much while in the lap belt.

FAA Response: The FAA acknowledges that the baseline for serious injury from abdominal loading is undetermined. However, the CAMI study found that shield-type booster seats, in combination with other factors, contributed to an abdominal pressure measurement higher than in other means of protection. In certifying aircraft seats and belts, any evidence of abdominal loading is considered grounds for disapproving a design. For many years, the FAA has not approved any design of passenger restraint that showed evidence of imposing restraint loads on the abdomen. It is accepted practice among restraint designers that the abdomen is not a load-carrying body segment. The unique nature of airline seats, where seat back breakover will cause a child in a booster seat to be crushed between the booster seat's shield and the crash forces of the adult in the row behind, are of sufficient concern to the FAA to prohibit the use of booster seats in aircraft during takeoff, landing, and movement on the surface.

The FAA notes that Cosco, like the FAA, seems concerned about the dangers of abdominal loading. In its comment, Cosco states that "in motor vehicles, children often move around so much that the lap belt becomes repositioned over the stomach, where it can cause serious injury in even a minor crash . . . Therefore, a shield booster, which keeps the lap belt off the child's stomach would be a significant improvement in most cases . . ." In addition, Cosco states that shield-type booster seats, which keep a lap belt off a child's stomach, would be a significant improvement in rough landings, even if its crash protection were less than a lap belt alone (since survivable crashes are so rare).

FAA Response: Performance data on the effectiveness of child restraint devices in "rough landings" are not available. However, because aircraft seat belt anchor points are located considerably forward of their location in a car, it is unlikely that an aircraft seat belt will move up into a child's abdomen.

Cosco also stated that parents would be more willing to carry a small booster seat rather than a larger forward-facing child restraint device. Cosco believes that they are then more likely to have the appropriate restraint for the child when they reach their destination and it will be the one that they are familiar with. Cosco states that by banning booster seats, parents will be less likely to have an appropriate restraint for their children when they reach their destination.

FAA Response: The FAA would like to clarify that the rule as proposed and adopted prohibits the use of booster seats only during take off, landing, and movement on the surface. It does not prohibit

not buy a ticket in order to use an approved child restraint device instead of a vest- and harness-type device. They stated that a harness is much more convenient to carry around than a convertible forward-facing seat and therefore the parent may fly with a child or his/her lap rather than carry a convertible forward-facing seat. Little Cargo also expressed concerns that, when considering the alternatives of lap-holding a child, using the passenger seat lap belt alone, or bringing an approved convertible child restraint system, parents will likely not choose to carry on a bulky restraint.

FAA Response: While the FAA agrees with Cosco and Little Cargo that a vest- and harness-type device is probably easier to carry than a convertible forward facing child restraint device, for most parents the cost of an airline passenger seat for the infant is probably more important to the parent than the ease of carrying a child restraint device. Since the commenters did not provide any specific information or statistics on this issue, the FAA continues to believe that parents who are predisposed to buy a ticket for a separate airplane seat for use with a booster seat or vest- and harness-type device and who have received education on the effectiveness of the allowable alternatives in advance of purchasing tickets would purchase a ticket for a separate seat in order to use an approved and recommended child restraint device.

In addition, Cosco commented that, of the four booster seats tested, head excursions for two did not exceed the limits set forth in FMVSS No. 213.

FAA Response: Although Cosco stated that of the four booster seats tested, two did not exceed the limits of FMVSS No. 213, in actuality one of the two booster seats that supposedly did not exceed the limits of FMVSS No. 213 disintegrated during the test and could not be analyzed for head excursion. The fact that of the four booster seats tested, head excursion for one did not exceed the limits set forth in FMVSS No. 213 is not relevant to the decision to ban shield-type booster seats. As discussed earlier, seat back breakover, a unique feature of aircraft seats, presents a threat of abdominal injury. Backless booster seats, by virtue of fundamental design characteristics, do not provide protection from this threat. That one of the four booster seats tested did not exceed the head strike envelope specified in FMVSS–213 has no bearing on the threat of abdominal injury.

Cosco also stated that the primary benefit of child restraints on aircraft is to restrain children in the event of turbulence. They stated that while certain types of child restraint devices do not perform well in crash situations, this should not preclude their overall use since crashes are rare while turbulence is not.

CAA was also concerned about prohibiting devices that can prevent injury in common occurrences such as flight turbulence.

FAA Response: The FAA is not prohibiting the use of booster seats and vest- and harness-type devices in cruise portions of flight. The FAA acknowledges that booster seats and vest- and harness-type devices might prevent injuries during turbulence and therefore is not prohibiting their use during cruise portions of flight.

Cosco stated that a design-restrictive ban precludes development of future products that may prove safe and would be more convenient for parents to use.

FAA Response: The FAA has determined that, at this time, booster seats and vest- and harness-type devices put children in a potentially worse situation than the allowable alternatives. If in the future a manufacturer designs such a device that the FAA determines is a safe alternative, it will review the prohibition. The FAA must, however, prohibit booster seats and vest- and harness-type devices at this time because of safety concerns. The FAA cannot delay this rule with the thought that a manufacturer might design a safe booster seat or vest- and harness-type device in the future or that such a ban precludes a manufacturer from development future products that may prove safe and convenient.

CAA stated that in a significant proportion of the cases where passengers carry small children on aircraft, the alternative to travel by private car will not be viable, so these passengers will continue to travel by air, notwithstanding the additional cost. CAA also states that it is reasonable to conclude

families taking longer trips are less likely to divert to alternative modes of transportation than people taking shorter trips. The FAA agrees that there are cases where parents would fly rather than not take a trip because they do not have a practical second alternative to flying. In most cases, however, parents have an alternative to flying. In the 1995 report, the FAA again found that mandating child restraint devices could cause more deaths and injuries than it would prevent. Therefore, the FAA will not mandate the use of child restraint devices for children under 2 years old. A copy of the report is included in the docket established for this rulemaking. In addition, the FAA will pursue an education program to better inform parents about child restraint devices. If clear guidance is readily available to parents, the FAA expects that they will choose an approved device, rather than lap holding their children, in order to provide the safest traveling environment for their children.

CAA and JAA state that they permit the belly belt on the grounds that it provides a measure of protection to children and/or other passengers versus lap holding a child.

FAA Response: The FAA would like to emphasize that belly belts are not permitted under current regulations. Even if belly belts do provide some measure or protection, the CAMI study found that belly belts allowed the test dummy to make severe contact with the back of the seat in the row in front of the test dummy and that a child may be crushed by the forward bending motion of the adult to whom the child is attached. Consideration of revising this current prohibition is beyond the scope of the notice.

The JAA also stated that in a crash or severe air turbulence, parents are often unable to keep a lap-held child in their arms.

FAA Response: As discussed earlier, the FAA has determined that mandating child restraint devices could cause more deaths and injuries than it would prevent. However, the FAA does not encourage lap-holding children. The FAA expects, with its education campaign providing clear guidance on child restraint devices, parents will choose an approved device, rather than lap holding their children, in order to provide the safest traveling environment for their children. The two members of the APCS Working Group submitted identical letters that discussed the need to mandate restraints for children. In addition, they stated that the FAA's argument that the extra cost to families caused by mandating child restraint devices would force them to less safe road travel is invalid since the same cost situation arises when the child is 3 or 4 or 10 years old.

FAA Response: The APCS Working Group's argument is that the extra cost to families of mandating child restraint devices is no more of a deterrent to air travel than the price of a ticket for a child of any age. However, the FAA notes that this argument does not take into account that ordinarily there is no charge for a lap-held child, whereas certificate holders very often do charge if a seat is requested for this infant. Thus, many people would switch to less safe automobile travel as a result of mandating child restraint usage because unlike most rulemakings where the compliance costs are passed along to all travelers, mandatory use of child restraint would impose compliance costs only on families with infants.

Other commenters raised comments that are beyond the scope of this rulemaking, such as providing design/certification standards for child restraint systems that are compatible with existing aircraft seat belt systems, revising FMVSS–213, changing anchor locations of seat belts, adopting performance standards for child restraint systems, changing labeling requirements on child restraint systems, establishing a child restraint friendly section of aircraft with modified seats, and clarifying what types of restraints are acceptable.

Editorial Note

The rules, as adopted, make it clear that, while the certificate holder has the authority to provide a child restraint system, such a system must be one authorized by the rule. This is to avoid any misinterpretation of this provision as an exception to the prohibitions adopted in this final rule.

international trade. With respect to this regulation, the FAA has determined that it: (1) is "a significant regulatory action" as defined in the Executive Order; (2) is significant as defined in the Department of Transportation's Regulatory Policies and Procedures; (3) will not have a significant impact on a substantial number of small entities; and (4) will not constitute a barrier to international trade. The FAA does not believe that this regulation will impose any significant costs on the public. Therefore, a full regulatory analysis, which includes the identification and evaluation of cost-reducing alternatives to this regulation, has not been prepared. Instead, the agency has prepared a more concise analysis of this regulation that is presented in the following paragraphs.

Costs and Benefits

There will be some compliance costs associated with this regulation. This rule will reduce the types of child restraint systems that can be used during ground movement, takeoff, and landings by prohibiting the use of all booster seats and vest- and harness-type child restraint systems during these phases of a flight. The restrictions on the use of these devices will need to be incorporated into flight attendant training and included in flight manuals, and this will impose additional costs on air carriers. For a period of time after the rule becomes effective, there will also be some public education necessary and potential flight delays when flight attendant tell parents who brought prohibited child restraint devices on board the aircraft that the devices are banned for use during takeoff, landing, and movement on the ground. The FAA has determined that booster seats and vest- and harness-type devices put children in a potentially worse situation than the alternatives during an aircraft crash. According to the CAMI study, these child restraint systems do not securely hold a child in place in an aircraft crash, and may themselves even cause harm to a child in the event of a crash. These types of accidents, while they rarely happen, usually occur during the takeoff or landing phases of a flight. Thus, prohibiting the use of these child restraint systems during takeoff and landing will enhance the child's safety, and the safety benefits will outweigh the slight compliance costs discussed above. Since it is impractical to expect flight attendants to monitor whether children are out of banned devices just prior to takeoff, the FAA is prohibiting the use of these devices during movement on the surface also.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities are not unnecessarily or disproportionately burdened by Federal regulations. The RFA requires a Regulatory Flexibility Analysis if a rule will have "a significant economic impact on a substantial number of small entities." FAA Order 2100.14A outlines FAA's procedures and criteria for implementing the RFA. Small entities are defined as independently owned and operated small businesses and small not-for-profit organizations.

This rule will impose some unquantified costs on air carriers. These costs include changing manuals and training flight attendants about the restrictions on the use of certain child restraint devices. Initially, there may be some public education necessary and possible flight delays when flight attendants tell parents or guardians that they may not use certain child restraint devices during ground movement, takeoff, or landing. However, the FAA believes that this rule will not have a significant economic impact on a substantial number of small entities.

International Trade Impact Assessment

This rule will not constitute a barrier to international trade, including the export of American goods and services to foreign countries and the import of foreign goods and services to the United States.

Federalism Implications

The regulations herein will not have substantial direct effects on the states, on the relationship between the national government and that of any state, or on the distribution of power and responsibilities among the various levels of government. The respondents affected by the amendments are private citizens, not

Flexibility Act. Because the economic impact of this rule is considered minimal, a formal regulatory evaluation has not been prepared.

The Amendment

In consideration of the foregoing, the Federal Aviation Administration amends parts 91, 121, 125, and 135 of the Federal Aviation Regulations (14 CFR parts 91, 121, 125, and 135) effective September 3, 1996.

The authority citation for part 125 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701–44702, 44705, 44710–44711, 44713, 44716–44717, 44722.

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equipment.

[(a) No person may take off an airplane with inoperable instruments or equipment installed unless the following conditions are met:

[(1) An approved Minimum Equipment List exists for that airplane.

[(2) The Flight Standards District Office having certification responsibility has issued the certificate holder operations specifications authorizing operations in accordance with an approved Minimum Equipment List. The flight crew shall have direct access at all times prior to flight to all of the information contained in the approved Minimum Equipment List through printed or other means approved by the Administrator in the certificate holders operations specifications. An approved Minimum Equipment List, as authorized by the operations specifications, constitutes an approved change to the type design without requiring recertification.

[(3) The approved Minimum Equipment List must:

[(i) Be prepared in accordance with the limitations specified in paragraph (b) of this section.

[(ii) Provide for the operation of the airplane with certain instruments and equipment in an inoperable condition.

[(4) Records identifying the inoperable instruments and equipment and the information required by paragraph (a)(3)(ii) of this section must be available to the pilot.

[(5) The airplane is operated under all applicable conditions and limitations contained in the Minimum Equipment List and the operations specifications authorizing use of the Minimum Equipment List.

[(b) The following instruments and equipment may not be included in the Minimum Equipment List:

[(1) Instruments and equipment that are either specifically or otherwise required by the airworthiness requirements under which the airplane is type certificated and which are essential for safer operations under all operating conditions.

condition unless the airworthiness directive provides otherwise.

[(3) Instruments and equipment required for specific operations by this part.

[(c) Nothwithstanding paragraphs (b)(1) and (b)(3) of this section, an airplane with inoperable instruments or equipment may be operated under a special flight permit under §§ 21.197 and 21.199 of this chapter.]

[(Amdt. 125–15, Eff. 6/20/91)]

§ 125.202 [Removed]

§ 125.203 Radio and navigational equipment.

(a) No person may operate an airplane unless it has two-way radio communications equipment able, at least in flight, to transmit to, and receive from, ground facilities 25 miles away.

(b) No person may operate an airplane over-the-top unless it has radio navigational equipment able to receive radio signals from the ground facilities to be used.

(c) [Except as provided in paragraph (e) of this section,] no person may operate an airplane carrying passengers under IFR or in extended overwater operations unless it has at least the following radio communication and navigational equipment appropriate to the facilities to be used which are capable of transmitting to, and receiving from, at any place on the route to be flown, at least one ground facility:

(1) Two transmitters, (2) two microphones, (3) two headsets or one headset and one speaker, (4) a marker beacon receiver, (5) two independent receivers for navigation, and (6) two independent receivers for communications.

(d) For the purposes of paragraphs (c)(5) and (c)(6) of this section, a receiver is independent if the function of any part of it does not depend on the functioning of any part of another receiver. However, a receiver that can receive both communications and navigational signals may be used in

fications. The following are among the operational factors the Administrator may consider in granting an authorization: (1) the ability of the flightcrew to reliably fix the position of the airplane within the degree of accuracy required by ATC, (2) the length of the route being flown, and (3) the duration of the very high frequency communications gap.]

[(Amdt. 125–25, Eff. 2/26/96)]

§ 125.205 Equipment requirements: Airplanes under IFR.

No person may operate an airplane under IFR unless it has—

(a) A vertical speed indicator;

(b) A free-air temperature indicator;

(c) A heated pitot tube for each airspeed indicator;

(d) A power failure warning device or vacuum indicator to show the power available for gyroscopic instruments from each power source;

(e) An alternate source of static pressure for the altimeter and the airspeed and vertical speed indicators;

(f) At least two generators each of which is on a separate engine, or which any combination of one-half of the total number are rated sufficiently to supply the electrical loads of all required instruments and equipment necessary for safe emergency operation of the airplane; and

(g) Two independent sources of energy (with means of selecting either), of which at least one is an engine-driven pump or generator, each of which is able to drive all gyroscopic instruments and installed so that failure of one instrument or source does not interfere with the energy supply to the remaining instruments or the other energy source. For the purposes of this paragraph, each engine-driven source of energy must be on a different engine.

(h) For the purposes of paragraph (f) of this section, a continuous inflight electrical load includes one that draws current continuously during flight, such as radio equipment, electrically driven instruments, and lights, but does not include occasional intermittent loads.

are visible to them. There must be a means of controlling the intensity of illumination unless it is shown that nondimming instrument lights are satisfactory.

125.206 Pitot heat indication systems.

(a) Except as provided in paragraph (b) of this section, after April 12, 1981, no person may operate a transport category airplane equipped with a flight instrument pitot heating system unless the airplane is equipped with an operable pitot indication system that complies with § 25.1326 of this chapter in effect on April 12, 1978.

(b) A certificate holder may obtain an extension of the April 12, 1981, compliance date specified in paragraph (a) of this section, but not beyond April 12, 1983, from the Director, Flight Standards Service if the certificate holder—

(1) Shows that due to circumstances beyond its control it cannot comply by the specified compliance date; and

(2) Submits by the specified compliance date a schedule for compliance acceptable to the Director, indicating that compliance will be achieved at the earliest practicable date.

(Amdt. 125–3, Eff. 9/30/81); (Amdt. 125–13, Eff. 10/25/89)

§ 125.207 Emergency equipment requirements.

(a) No person may operate an airplane having a seating capacity of 20 or more passengers unless it is equipped with the following emergency equipment:

(1) One approved first aid for treatment of injuries likely to occur in flight or in a minor accident, which meets the following specifications and requirements:

(i) Each first aid kit must be dust and moisture proof and contain only materials that either meet Federal Specifications GGK–391a, as revised, or as approved by the Administrator.

(ii) Required first aid kits must be readily accessible to the cabin flight attendants

Ammonia inhalants	10
Bandage compressors, 4 in	8
Triangular bandage compressors, 40 in	5
Arm splint, noninflatable	1
Leg splint, noninflatable	1
Roller bandage, 4 in	4
Adhesive tape, 1-in standard roll	2
Bandage scissors	1
Protective latex gloves or equivalent nonpermeable gloves	1 pair]

[(iv) Protective latex gloves or equivalent nonpermeable gloves may be placed in the first aid kit or in a location that is readily accessible to crewmembers.]

(2) A crash axe carriet has to be accessible to the crew but inaccessible to passengers during normal operations.

(3) Signs that are visible to all occupants to notify them when smoking is prohibited and when safety belts should be fastened. The signs must be so constructed that they can be turned on and off by a crewmember. They must be turned on for each takeoff and each landing and when otherwise considered to be necessary by the pilot in command.

(4) The additional emergency equipment specified in appendix A of this part.

(b) *Megaphones.* Each passenger-carrying airplane must have a portable battery-powered megaphone or megaphones readily accessible to the crewmembers assigned to direct emergency evacuation, installed as follows:

(1) One megaphone on each airplane with a seating capacity of more than 60 and less than 100 passengers, at the most rearward location in the passenger cabin where it would be readily accessible to a normal flight attendant seat. However, the Administrator may grant a deviation from the requirements of this subparagraph if the Administrator finds that a different location would be more useful for evacuation of persons during an emergency.

(2) Two megaphones in the passenger cabin on each airplane with a seating capacity of more than 99 and less than 200 passengers, one

flight attendant seat, and one installed in a readily accessible location in the mid-section of the airplane.

(Amdt. 125–19, Eff. 1/12/94); [(Amdt. 125–22, Eff. 12/2/94)]

§ 125.209 Emergency equipment: Extended overwater operations.

(a) No person may operate an airplane in extended overwater operations unless it carries, installed in conspicuously marked locations easily accessible to the occupants if a ditching occurs, the following equipment:

(1) An approved life preserver equipped with an approved survivor locator light, or an approved flotation means, for each occupant of the aircraft. The life preserver or other flotation means must be easily accessible to each seated occupant. If a flotation means other than a life preserver is used, it must be readily removable from the airplane.

(2) Enough approved life rafts (with proper buoyancy) to carry all occupants of the airplane, and at least the following equipment for each raft clearly marked for easy identification—

(i) One canopy (for sail, sunshade, or rain catcher);

(ii) One radar reflector (or similar device);

(iii) One life raft repair kit;

(iv) One bailing bucket;

(v) One signaling mirror;

(vi) One police whistle;

(vii) One raft knife;

(viii) One CO_2 bottle for emergency inflation;

(ix) One inflation pump;

(x) Two oars;

(xi) One 75-foot retaining line;

(xii) One magnetic compass;

(xiii) One dye marker;

(xiv) One flashlight having at least two size "D" cells or equivalent;

(xv) At least one approved pyrotechnic signaling device;

the area in which the airplane is operated.

(b) [No person may operate an airplane in extended overwater operations unless there is attached to one of the life rafts required by paragraph (a) of this section, an approved survival type emergency locator transmitter. Batteries used in this transmitter must be replaced (or recharged, if the batteries are rechargeable) when the transmitter has been in use for more than one cumulative hour, or, when 50 percent of their useful life (or for rechargeable batteries, 50 percent of their useful life of charge) has expired, as established by the transmitter manufacturer under its approval. The new expiration date for replacing (or recharging) the battery must be legibly marked on the outside of the transmitter. The battery useful life (or useful life of charge) requirements of this paragraph do not apply to batteries (such as water-activated batteries) that are essentially unaffected during probably storage intervals.]

[(Amdt. 125–20, Eff. 6/21/94)]

§ 125.211 Seats and safety belts.

(a) No person may operate an airplane unless there are available during the takeoff, en route flight, and landing—

(1) An approved seat or berth for each person on board the airplane who is at least 2 years old; and

(2) An approved safety belt for separate use by each person on board the airplane who is at least 2 years old, except that two persons occupying a berth may share one approved safety belt and two persons occupying a multiple lounge and divan seat may share one approved safety belt during en route flight only.

(b) Except as provided in paragraphs (b)(1) and (b)(2) of this section, each person on board an airplane operated under this part shall occupy an approved seat or berth with a separate safety belt properly secured about the surface, takeoff, and landing. A safety belt provided for the occupant of a seat may not be used for more than one person who has reached his or her second birthday. Notsystem furnished by the certificate holder or one of the persons described in paragraph (b)(2)(i) of this section, provided:

(i) The child is accompanied by a parent, guardian, or attendant designated by the child's parent or guardian to attend to the safety of the child during the flight;

(ii) [Except as provided in paragraph (b)(2)(ii)(D) of this section, the approved child restraint system bears one or more labels as follows:]

(A) Seats manufactured to U.S. standards between January 1, 1981, and February 25, 1985, must bear the label: "This child restraint system conforms to all applicable Federal motor vehicle safety standards."

(B) Seats manufactured to U.S. standards on or after February 26, 1985, must bear two labels:

(1) "This child restraint system conforms to all applicable Federal motor vehicle safety standards", and

(2) "THIS RESTRAINT IS CERTIFIED FOR USE IN MOTOR VEHICLES AND AIRCRAFT" in red lettering;

(C) Seats that do not qualify under paragraphs (b)(2)(ii)(A) and (b)(2)(ii)(B) of this section must bear either a label showing approval of a foreign government or a label showing that the seat was manufactured under the standards of the United Nations;

[(D) Notwithstanding any other provisions of this section, booster-type child restraint systems (as defined in Federal Motor Vehicle Standard No. 213 (49 CFR 571.213)), vest- and harness-type child restraint systems, and lap held child restraints are not approved for use in aircraft; and]

(iii) The certificate holder complies with the following requirements:

(A) The restraint system must be properly secured to an approved forward-facing seat or berth;

[(1) No certificate holder may permit a child, in an aircraft, to occupy a booster-type child restraint system, a vest-type child restraint system, a harness-type child restraint system, or a lap held child restraint system during take off, landing, and movement on the surface.

[(2) Except as required in paragraph (c)(1) of this section, no certificate holder may prohibit a child, if requested by the child's parent, guardian, or designated attendant, from occupying a child restraint system furnished by the child's parent, guardian, or designated attendant provided:

[(i) The child holds a ticket for an approved seat or berth or such seat or berth is otherwise made available by the certificate holder for the child's use;

[(ii) The requirements of paragraph (b)(2)(i) are met;

[(iii) The requirements (b)(2)(iii) are met; and

[(iv) The child restraint system has one or more of the labels described in paragraph (b)(2)(ii)(A) through paragraph (b)(2)(ii)(C).

[(3) This section does not prohibit the certificate holder from providing child restraint systems authorized by this section or, consistent with safe operating practices, determining the most appropriate passenger seat location for the child restraint system.]

(d) Each sideward facing seat must comply with the applicable requirements of § 25.785(c) of this chapter.

(e) No certificate holder may take off or land an airplane unless each passenger seat is in the upright position. Each passenger shall comply with instructions given by a crewmember in compliance with this paragraph. This paragraph does not apply to seats on which cargo or persons who are unable to sit erect for a medical reason are carried in accordance with procedures in the certificate holder's manual if the seat back does not obstruct any passenger's access to the aisle or to any emergency exit.

(f) Each occupant of a seat equipped with a shoulder harness must fasten the shoulder harness

No person may conduct any operation unless the following equipment is installed in the airplane.

(a) If protective fuses are installed on an airplane, the number of spare fuses approved for the airplane and appropriately described in the certificate holder's manual.

(b) A windshield wiper or equivalent for each pilot station.

(c) A power supply and distribution system that meets the requirements of §§ 25.1309, 25.1331, 25.1351 (a) and (b)(1) through (4), 25.1353, 25.1355, and 25.1431(b) or that is able to produce and distribute the load for the required instruments and equipment, with use of an external power supply if any one power source or component of the power distribution system fails. The use of common elements in the system may be approved if the Administrator finds that they are designed to be reasonably protected against malfunctioning. Engine-driven sources of energy, when used, must be on separate engines.

(d) A means for indicating the adequacy of the power being supplied to required flight instruments.

(e) Two independent static pressure systems, vented to the outside atmospheric pressure so that they will be least affected by air flow variation or moisture or other foreign matter, and installed so as to be airtight except for the vent. When a means is provided for transferring an instrument from its primary operating system to an alternative system, the means must include a positive positioning control and must be marked to indicate clearly which system is being used.

(f) A placard on each door that is the means of access to a required passenger emergency exit to indicate that it must be open during takeoff and landing.

(g) A means for the crew, in an emergency, to unlock each door that leads to a compartment that is normally accessible to passengers and that can be locked by passengers.

§ 125.215 Operating information required.

(a) The operator of an airplane must provide the following materials, in current and appropriate

letdown chart;

(5) One—engine-inoperative climb performance data and, if the airplane is approved for use in IFR or over-the-top operations, that data must be sufficient to enable the pilot to determine that the airplane is capable of carrying passengers over-the-top or in IFR conditions at a weight that will allow it to climb, with the critical engine inoperative, at least 50 feet a minute when operating at the MEA's of the route to be flown or 5,000 feet a minute when operating at the MEA's of the route to be flown or 5,000 feet MSL, whichever is higher.

(b) Each cockpit checklist required by paragraph (a)(1) of this section must contain the following procedures: (1) Before starting engines; (2) Before takeoff; (3) Cruise; (4) Before landing, (5) After landing; (6) Stopping engines.

(c) Each emergency cockpit checklist required by paragraph (a)(2) of this section must contain the following procedures, as appropriate:

(1) Emergency operation of fuel, hydraulic, electrical, and mechanical systems.

(2) Emergency operation of instruments and controls.

(3) Engine inoperative procedures.

(4) Any other emergency procedures necessary for safety.

§ 125.217 Passenger information.

(a) [Except as provided in paragraph (b) of this section, no person may operate an airplane carrying passengers unless it is equipped with signs that meet the requirements of § 25.791 of this chapter and that are visible to passengers and flight attendants to notify them when smoking is prohibited and when safety belts must be fastened. The signs must be so constructed that the crew can turn them on and off. They must be turned on during airplane movement on the surface, for each takeoff, for each landing, and when otherwise considered to be necessary by the pilot in command.]

(b) [No passenger or crewmember may smoke while any "No Smoking" sign is lighted nor may tion.]

[(Amdt. 125–17, Eff. 10/15/92)]

§ 125.219 Oxygen for medical use by passengers.

(a) Except as provided in paragraphs (d) and (e) of this section, no certificate holder may allow the carriage or operation of equipment for the storage, generation or dispensing of medical oxygen unless the unit to be carried is constructed so that all valves, fittings, and gauges are protected from damage during that carriage or operation and unless the following conditions are met:

(1) The equipment must be—

(i) Of an approved type or in conformity with the manufacturing, packaging, marking, labeling, and maintenance requirements of Title 49 CFR parts 171, 172, and 173, except § 173.24(a)(1);

(ii) When owned by the certificate holder, maintained under the certificate holder's approved maintenance program;

(iii) Free of flammable contaminants on all exterior surfaces; and

(iv) Appropriately secured.

(2) When the oxygen is stored in the form of a liquid, the equipment must have been under the certificate holder's approved maintenance program since its purchase new or since the storage container was last purged.

(3) When the oxygen is stored in the form of a compressed gas as defined in Title 49 CFR § 173.300(a)—

(i) When owned by the certificate holder, it must be maintained under its approved maintenance program; and

(ii) The pressure in any oxygen cylinder must not exceed the rate cylinder pressure.

(4) The pilot in command must be advised when the equipment is on board and when it is intended to be used.

(5) The equipment must be stowed, and each person using the equipment must be seated so as not to restrict access to or use of any required

oxygen equipment to connect or disconnect oxygen bottles or any other ancillary component while any passenger is aboard the airplane.

(d) Paragraph (a)(1)(i) of this section does not apply when that equipment is furnished by a professional or medical emergency service for use on board an airplane in a medical emergency when no other practical means of transportation (including any other properly equipped certificate holder) is reasonably available and the person carried under the medical emergency is accompanied by a person trained in the use of medical oxygen.

(e) Each certificate holder who, under the authority of paragraph (d) of this section, deviates from paragraph (a)(1)(i) of this section under a medical emergency shall, within 10 days, excluding Saturdays, Sundays, and Federal holidays, after the deviation, send to the FAA Flight Standards district office charged with the overall inspection of the certificate holder a complete report of the operation involved, including a description of the deviation and the reasons for it.

§ 125.221 Icing conditions: Operating limitations.

(a) [No pilot may take off an airplane that has frost, ice, or snow adhering to any propeller, windshield, wing, stabilizing or control surface, to a powerplant installation, or to an airspeed, altimeter, rate of climb, or flight attitude instrument system, except under the follow conditions:

[(1) Takeoffs may be made with frost adhering to the wings, or stabilizing or control surfaces, if the frost has been polished to make it smooth.

[(2) Takeoffs may be made with frost under the wing in the area of the fuel tanks if authorized by the Administrator.

[(b) No certificate holder may authorize an airplane to take off and no pilot may take off an airplane any time conditions are such that frost, ice, or snow may reasonably be expected to adhere to the airplane unless the pilot has completed the testing required under § 125.287(a)(9) and unless one of the following requirements is met:

alternative procedure and under that procedure the airplane is determined to be free of frost, ice, or snow.

[(3) The certificate holder has an approved deicing/anti-icing program that complies with § 121.629(c) of this chapter and the takeoff complies with that program.]

([c]) Except for an airplane that has ice protection provisions that meet appendix C of this part or those for transport category airplane type certification, no pilot may fly—

(1) Under IFR into known or forecast light or moderate icing conditions; or

(2) Under VFR into known light or moderate icing conditions, unless the airplane has functioning deicing or anti-icing equipment protecting each propeller, windshield, wing, stabilizing or control surface, and each airspeed, altimeter, rate of climb, or flight attitude instrument system.

([d]) Except for an airplane that has ice protection provisions that meet appendix C of this part or those for transport category airplane type certification, no pilot may fly an airplane into known or forecast severe icing conditions.

([e]) If current weather reports and briefing information relied upon by the pilot in command indicate that the forecast icing condition that would otherwise prohibit the flight will not be encountered during the flight because of changed weather conditions since the forecast, the restrictions in paragraphs [(c) and (d)] of this section based on forecast conditions do not apply.

[(Amdt. 125–18, Eff. 1/31/94)]

§ 125.223 Airborne weather radar equipment requirements.

(a) No person may operate an airplane governed by this part in passenger-carrying operations unless approved airborne weather radar equipment is installed in the airplane.

(b) No person may begin a flight under IFR or night VFR conditions when current weather reports indicate that thunderstorms, or other potentially hazardous weather conditions that can be detected with airborne weather radar equipment,

solely within the State of Hawaii, within the State of Alaska, within that part of Canada west of longitude 130 degrees W, between latitude 70 degrees N, and latitude 53 degrees N, or during any training, test, or ferry flight.

(e) Without regard to any other provision of this part, an alternate electrical power supply is not required for airborne weather radar equipment.

§ 125.224 Traffic alert and collision avoidance system.

(a) After December 30, 1993, no person may operate a large airplane that has passenger seating configuration, excluding any pilot seat, or more than 30 seats unless it is equipment with an approved TCAS II traffic alert and collision avoidance system and the appropriate class of Mode S transponder.

(b) The manual required by § 125.71 of this part shall contain the following information on the TCAS II system required by this section.

(1) Appropriate procedures for—

(i) The operation of the equipment; and

(ii) Proper flightcrew action with respect to the equipment.

(2) An outline of all input sources that must be operating for the TCAS II to function properly.

Docket No. 25355 (54 FR 951) Eff. 1/10/89, (Amdt. 125–11, Eff. 2/9/89); (Amdt. 125–14, Eff. 5/9/90)

§ 125.225 Flight recorders.

(a) Except as provided in paragraph (d) of this section, after October 11, 1991, no person may operate a large airplane type certificated before October 1, 1969, for operations above 25,000 feet altitude, nor a multiengined, turbine powered airplane type certificated before October 1, 1969, unless it is equipped with one or more approved flight recorders that utilize a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. The following information must be able to be determined within the ranges, accuracies, resolution, and

(7) Pitch attitude;

(8) Roll attitude;

(9) Longitudinal acceleration;

(10) Control column or pitch control surface position; and

(11) Thrust of each engine.

(b) Except as provided in paragraph (d) of this section, after October 11, 1991, no person may operate a large airplane type certificated after September 30, 1969, for operations above 25,000 feet altitude, nor a multiengined, turbine-powered airplane type certificated after September 30, 1969, unless it is equipped with one or more approved flight recorders that utilize a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. The following information must be able to be determined within the ranges, accuracies, resolutions, and recording intervals specified in appendix D of this part:

(1) Time;

(2) Altitude;

(3) Airspeed;

(4) Vertical acceleration;

(5) Heading;

(6) Time of each radio transmission either to or from air traffic control;

(7) Pitch attitude;

(8) Roll attitude;

(9) Longitudinal acceleration;

(10) Pitch trim position;

(11) Control column or pitch control surface position;

(12) Control wheel or lateral control surface position;

(13) Rudder pedal or yaw control surface position;

(14) Thrust of each engine;

(15) Position of each thrust reverser;

(16) Trailing edge flap or cockpit flap control position; and

(17) Leading edge flap or cockpit flap control position.

ranges, accuracies, resolution, and sampling intervals specified.

(d) No person may operate under this part an airplane that is manufactured after October 11, 1991, unless it is equipped with one or more approved flight recorders that utilize a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. The parameters specified in appendix D of this part must be recorded within the ranges, accuracies, resolutions and sampling intervals specified. For the purpose of this section, ''manufactured'' means the point in time at which the airplane inspection acceptance records reflect that the airplane is complete and meets the FAA-approved type design data.

(e) Whenever a flight recorder required by this section is installed, it must be operated continuously from the instant the airplane begins the takeoff roll until it has completed the landing roll at an airport.

(f) Except as provided in paragraph (g) of this section, and except for recorded data erased as authorized in this paragraph, each certificate holder shall keep the recorded data prescribed in paragraph (a), (b), (c), or (d) of this section, as applicable, until the airplane has been operated for at least 25 hours of the operating time specified in § 125.227(a) of this chapter. A total of 1 hour of recorded data may be erased for the purpose of testing the flight recorder or the flight recorder system. Any erasure made in accordance with this paragraph must be of the oldest recorded data accumulated at the time of testing. Except as provided in paragraph (g) of this section, no record need be kept more than 60 days.

(g) In the event of an accident or occurrence that requires immediate notification of the National Transportation Safety Board under 49 CFR part 830 and that results in termination of the flight, the certificate holder shall remove the recording media from the airplane and keep the recorded data required by paragraphs (a), (b), (c), or (d) of this section, as applicable, for at least 60 days or for a longer period upon the request of the Board or the Administrator.

(3) On which there are no differences in the type design with respect to the installation of the first pilot's instruments associated with the flight recorder. The most recent instrument calibration, including the recording medium from which this calibration is derived, and the recorder correlation must be retained by the certificate holder.

(i) Each flight recorder required by this section that records the data specified in paragraphs (a), (b), (c), or (d) of this section must have an approved device to assist in locating that recorder under water.

Docket No. 25530 (53 FR 26148) Eff. 7/11/88, (Amdt. 125–10, Eff. 10/11/88)

§ 125.227 Cockpit voice recorders.

(a) No certificate holder may operate a large turbine engine powered airplane or a large pressurized airplane with four reciprocating engines unless an approved cockpit voice recorder is installed in that airplane and is operated continuously from the start of the use of the checklist (before starting engines for the purpose of flight) to completion of the final checklist at the termination of the flight.

(b) Each certificate holder shall establish a schedule for completion, before the prescribed dates, of the cockpit voice recorder installations required by paragraph (a) of this section. In addition, the certificate holder shall identify any airplane specified in paragraph (a) of this section he intends to discontinue using before the prescribed dates.

(c) The cockpit voice recorder required by this section must also meet the following standards:

(1) The requirements of part 25 of this chapter in effect after October 11, 1991.

(2) After September 1, 1980, each recorder container must—

(i) Be either bright orange or bright yellow;

(ii) Have reflective tape affixed to the external surface to facilitate its location under water; and

(iii) Have an approved underwater locating device on or adjacent to the container which

may be used so that, at any time during the operation of the recorder, information recorded more than 30 minutes earlier may be erased or otherwise obliterated.

(e) For those aircraft equipped to record the uninterrupted audio signals received by a boom or a mask microphone the flight crew members are required to use the boom microphone below 18,000 feet mean sea level. No person may operate a large turbine-engine powered airplane or a large pressurized airplane with four reciprocating engines manu-

of the flight, the certificate holder shall keep the recorded information for at least 60 days or, if requested by the Administrator or the Board, for a longer period. Information obtained from the record is used to assist in determining the cause of accidents or occurrences in connection with investigations under 49 CFR part 830. The Administrator does not use the record in any civil penalty or certificate action.

Docket No. 25530 (53 FR 26148) Eff. 7/11/88, (Amdt. 125–10, Eff. 10/11/88)